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A Brief Summary of Economic Conditions

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IN THIS ISSUE

IMPORTANT AGRICULTURAL NEWS of the month included signing of a reciprocal trade agreement with the United Kingdom, announcement of the Agricultural Adjustment Program for 1939, and the raising of estimates of farmers' cash income in 1938 to $7,625,000,000. * * * The trade agreement permits United States wheat to enter the United Kingdom duty free on the same basis as Canadian and Australian wheat, it abolishes the British duty on American lard, abolishes duties on certain fruit juices, and reduces duties on fresh apples and pears. The Adjustment Program makes a reduction in the acreage goal for wheat but virtually no change in other major crops, and it offers considerably increased conservation payments to producers of cotton, corn, wheat, and rice. The increase in the 1938 cash income estimates is the result of improved domestic demand for farm products and the buying of surplus commodities by the Government. * * * A deal involving the export of 20,000,000 bushels of domestic wheat to flour mills in the United Kingdom was announced by the Department of Agriculture on December 1.

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Commodity Reviews

DEMAND: Up More

INDUSTRIAL activity during November continued the advance which has been in progress since June. More than half of the ground lost in industrial production from the summer of 1937 to the summer of 1938 has been recovered. The improvement in consumer purchasing power apparently has been less marked, although data are not yet available for the last 2 months. Manufacturing plants have been able to increase production to some extent merely by taking up the slack with existing working forces, and the recovery of consumer incomes and purchasing power for farm products will follow more slowly the general spread of business improvement.

The sharp increase in industrial production in recent months has been a reflection mainly of increases in the output of steel, automobiles, and textiles, and a marked pick-up in building activity. The latter has continued at an accelerated pace, with a very sharp rise from September to October, after allowing for seasonal tendencies. Operations in the automobile and steel industries, however, show evidence of approaching the limit of immediate expansion possibilities, and little or no added stimulus from these important industries can be looked for during the next several months. In fact, some slowing down in automobile production may occur, as dealers become completely stocked with new cars and the early rush to buy new models subsides.

Likewise, steel manufacturers have been working to a considerable extent on steel for the new automobile models, and also to fill orders which were placed recently during the temporary decline in steel prices. When this business is partly cleaned up, some decrease in steel output might occur. It now appears unlikely that expansion in building activity or in a number of other less important industries can be sufficient to offset these developments, and no large additional increase in industrial production before spring is indicated.

In general, the outlook is for some additional improvement in consumer purchasing power and demand for farm products in the United States in the near future, followed by a period of relative stability.

CASH INCOME: Estimate Raised

BAE has increased its estimate of 1938 cash farm income from marketings and Government payments to $7,625,000,000, as compared with the $7,500,000,000 estimate of last summer. Reasons for the increase are the improvement in demand for farm products and the purchases of surplus commodities by the Surplus Commodities Corporation, which are resulting in larger income from meat animals, dairy products, and fruits and vegetables.

The 1938 income estimate includes $7,125,000,000 from marketings and $500,000,000 in Government payments. In 1937 marketings yielded $8,233,000,000 and Government payments $367,000,000. Cash income totaled $7,944,000,000 in 1936 and $4,328,000,000 in 1932.

Income from livestock and livestock products has declined less this year than the income from crops. In the first 10 months of 1938 the income from marketings of livestock and products totaled $3,304,000,000 compared with $3,529,000,000 during the same period of 1937. Marketings of crops yielded $2,499,000,000 of cash income in the first 10 months of 1938, compared with $3,199,000,000 in the like period of 1937.

Dairy products have been the principal sustaining factor in income from the livestock and products group, with marketings during the first 10 months yielding $1,243,000,000 of cash income compared with $1,241,000,000 in 1937. Meat animals returned $1,529,000,000

of cash income compared with $1,668,000,000 in 1937, and poultry and eggs $439,000,000 compared with $502,000,000.

The crops group include: Grains $701,000,000 of income from marketings in the 10 months this year, compared with $942,000,000 in 1937; cotton and cottonseed, $525,000,000 compared with $607,000,000; fruits and vegetables, $765,000,000 compared with $991,000,000. Government payments totaled $395,000,000 compared with $355,000,000 in 1937.

	Income from marketings	From Government payments	Total
October:			
1938	$777,000,000	$62,000,000	$839,000,000
1937	907,000,000	5,000,000	912,000,000
1936	882,000,000	22,000,000	904,000,000
January–October:			
1938	5,803,000,000	395,000,000	6,198,000,000
1937	6,728,000,000	355,000,000	7,083,000,000
1936	6,104,000,000	232,000,000	6,336,000,000

PRICES: Down

The index of prices of farm products declined one point during the month ended November 15. The index was 94, and compares with 107 in November last year.

During the last month of record prices of grains as a group were unchanged, cotton advanced, fruits were up slightly, dairy products were up, egg prices advanced, meat animals were down. Lower prices of tobacco were primarily responsible for the decline in the index.

Index Numbers of Prices Received and Paid by Farmers

[1910–14=100]

Year and month	Prices received	Prices paid	Buying power of farm products[1]
1937			
November	107	127	84
December	104	126	83
1938			
January	102	126	81
February	97	126	77
March	96	125	77
April	94	125	75
May	92	125	74
June	92	124	74
July	95	123	77
August	92	122	75
September	95	121	78
October	95	121	79
November	94	121	78

[1] Ratio of prices received to prices paid.

Prices of Farm Products

Estimates of average prices received by farmers at local markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909–July 1914	November 1909–13	November 1937	October 1938	November 1938	Parity price, November 1938
Cotton, lb.—cents	12.4	12.1	7.8	8.5	8.53	15.6
Corn, bu.—do	64.2	59.4	48.0	41.9	40.0	80.9
Wheat, bu.—do	88.4	87.3	81.9	52.2	52.0	111.4
Hay, ton.—dollars	11.87	11.89	8.74	6.72	6.82	14.96
Potatoes, bu.—cents	69.7	61.4	51.2	51.0	54.7	86.5
Oats, bu.—do	39.9	38.2	28.7	22.1	22.5	50.3
Soybeans, bu.—do	(1)	(1)	83.1	63.9	62.6	----------
Peanuts, lb.—do	4.8	4.5	3.2	3.2	3.3	6.0
Beef, cattle, cwt.—dollars	5.21	5.01	6.53	6.33	6.32	6.56
Hogs, cwt.—do	7.22	6.96	8.25	7.28	7.25	9.10
Chickens, lb.—cents	11.4	10.8	16.9	13.6	13.6	14.4
Eggs, doz.—do	21.5	27.8	28.0	27.1	29.0	[3] 38.9
Butterfat, lb.—do	26.3	28.5	36.2	24.4	25.0	35.1
Wool, lb.—do	18.3	18.5	26.0	19.7	20.5	23.1
Veal calves, cwt.—dollars	6.75	6.74	8.34	8.28	8.27	8.50
Lambs, cwt.—do	5.87	5.31	7.87	6.37	6.82	7.40
Horses, each.—do	136.60	133.00	[2] 87.80	79.90	79.40	172.10

[1] Prices not available. [2] Revised. [3] Adjusted for seasonality.

WHEAT: Record Crop

Estimates of world wheat production for 1938–39 have been increased to 4,385 million bushels, the largest on record. This is about 540 million bushels more than the 1937–38 harvest. Production in the Northern Hemisphere countries is estimated at about 500 million bushels more than last year; prospects in the Southern Hemisphere are for an increase of about 40 million bushels.

World supply of wheat (production plus carry-over) for 1938–39 has been estimated at about 4,980 million bushels, or about 620 million more than a year ago. Net exports from Soviet Russia may approximate 40 million bushels. With low prices and abundant supplies, disappearance of wheat during the present marketing season may approximate 3,850 million bushels. On the basis of these figures the carry-over in July 1939 would total about 1,173 million bushels. The high record carry-over—in 1933—was about 1,195 million bushels.

Total United States supplies are indicated at 1,094 million bushels for 1938–39, consisting of a July 1 carry-over of 154 million bushels and the 1938 crop of 940 million bushels. Disappearance of about 700 million bushels plus exports of 100 million would leave a carry-over of about 300 million bushels on July 1 next. The high record carry-over—in 1933—was 378 million bushels; the average for the 5 years 1930–34 was about 325 million.

Changes in wheat prices are expected to continue to depend largely upon changes in production prospects in Argentina and Australia, progress of the United States winter wheat crop, and upon general business conditions.

Under the terms of the reciprocal trade agreement with the United Kingdom, signed November 17 and effective January 1, 1939, Empire preference was removed on wheat imports. This permits United States wheat to enter the United Kingdom duty free on the same basis as Canadian and Australian wheat. Duty reductions on United States wheat flour were also obtained in a number of the British Crown Colonies and in Newfoundland.

COTTON: Burdensome Supply

November saw little change in the burdensome cotton supply situation. Domestic mill consumption has increased, but in the first quarter of the current season consumption was about 5 percent less than in the like period of 1937. Exports of American cotton, totaling 1,054,000 bales during the 3 months August through October, were 600,000 bales less than in the same period of 1937. They were the smallest for the period since 1920.

Mill activity in most foreign countries has continued on a restricted basis, although some evidence of improvement has appeared since the easing of international political tension in September. Seasonal gains in mill activity, and in trade in yarn and cloth markets have been noted. Foreign purchases of American cotton have been retarded by a combination of adverse circumstances, including a large supply of unused cotton which foreign mills bought for the 1937–38 season, and the fact that spot prices of American cotton in foreign countries relative to some of the important Indian and Brazilian growths are the highest in 2½ years.

Favorable factors in the United States are that the November sales of cotton textiles by domestic manufacturers equaled or exceeded the relatively high output, and the prospects for textile industry improvement as domestic industrial production and pay rolls make further gains. In November, the United States Government loan stocks of cotton were increased to nearly 10,000,000 bales, thereby reducing the "free" supply of American cotton.

CATTLE: Increased Feeding

Latest available information indicates a small increase in cattle feed-

ing this winter and next spring as compared with a year earlier. Enlarged feeding operations are expected in the western Corn Belt States, reduced operations are expected in the eastern Corn Belt, and in the total for other feeding areas. For the entire country, the abundant feed supplies at relatively low prices will be reflected more in the finish than in the number of cattle fed.

Limiting feeding factors are the relatively strong demand for cattle for restocking and herd expansion and the smaller number of feeder animals available this year than last. Average weights of cattle slaughtered in 1939 will be heavier and the general finish higher than in 1938, but total beef supplies for consumption probably will be somewhat smaller. Market supplies of grain-fed cattle will be somewhat larger, but marketings of cows and heifers will be smaller in 1939 than in 1938.

As industrial activity and consumer buying power increase, the demand for meats will strengthen in 1939. This will be a cattle price-strengthening factor, aided by the reduction in total cattle slaughter. An opposing force will be the larger supplies of hogs.

Cattle numbers at the beginning of 1939 probably will be slightly larger than a year earlier—first phase of a new cattle production cycle.

HOGS: Lower Priced

Prices of hogs declined seasonally in early November as a result of increased marketings. Inspected hog slaughter in October, totaling 3,311,000 head, was 24 percent larger than in September, 22 percent larger than in October 1937, but 7 percent smaller than the average slaughter for October in the 5 years 1929–33.

The average weight of hogs slaughtered at 7 markets in October this year was 224 pounds. This was 10 pounds lighter than a year earlier, reflecting an increased proportion of spring pigs in the market supply. Last year, a relatively large number of old hogs was carried through the summer and marketed during the early fall months.

Storage stocks of pork totaled 251 million pounds on November 1, about 6 percent smaller than a year earlier, and more than 40 percent smaller than average holdings on November 1 for the 5 years 1929–33. But stocks of lard totaled 68 million pounds on November 1, more than 70 percent larger than the small stocks on November 1 last year, and nearly equal to the 5-year average.

Despite declining hog prices, the hog-corn price ratio increased sharply in October and early November as a result of relatively greater declines in corn prices. For the week ended November 5, the average price per 100 pounds of hogs at Chicago was equivalent in value to 18.2 bushels of No. 3 yellow corn, the highest hog-corn price ratio since June 1926. This high ratio reflects the abundant supplies and low prices of feeds, and indicates a favorable situation for increased hog production.

LAMBS: Reduced Feeding

Fewer lambs will be fed this season than last, but about as many as in the preceding 4 years. Reduced feeding is expected in both the Corn Belt and in western feeding States. The decrease in the Corn Belt States will be largely in the number fed in the area east of the Mississippi River; in the area west of the River about the same number (including lambs on wheat pastures) will be fed this year as last.

Total slaughter of sheep and lambs during the fed lamb marketing season—December-April—however, probably will be somewhat larger than a year earlier, reflecting the 5-percent increase in the 1938 lamb crop. Marketings of fed lambs to May 1 next may be smaller than a year earlier, but marketings of other lambs and sheep, particularly from Texas, are likely to be larger.

An upward trend in numbers of sheep is in prospect during the next

few years; even so, the large 1938 lamb crop may not be equalled for several seasons because of the dependence of the crop on weather conditions. Expansion in sheep numbers, however, is likely to be reflected in increased production of wool.

WOOL: Consumption Increase

Domestic stocks of wool are larger than a year ago, but stocks of manufactured goods are relatively small, and prospects are for an improvement in consumer demand. Unless imports of wool are large, the prospective increase in mill consumption in coming months will reduce domestic stocks of wool by next April 1 below the supply on April 1 last.

United States imports for consumption of apparel wool in the first 9 months of 1938 totaled only 18 million pounds compared with 139 million pounds in the same months of 1937. Imports in the first half of 1939 are expected to continue fairly small, but may be somewhat larger than in 1938.

Supplies of wool from the Southern Hemisphere in 1938–39 are expected to be slightly larger than in 1937–38, but about the same as the average for the preceding 5 years. A prospective decline in wool production in the Southern Hemisphere in 1938–39 is more than offset by the larger carryover into the current season.

The prospective increase in United States mill consumption will be a domestic wool price supporting factor. Increased trading in the Boston wool market in October was accompanied by price advances of 1 to 2 cents per grease pound on most grades of wool. Wool prices also advanced in Southern Hemisphere selling centers.

TRUCK CROPS: Prices Lower

Prices of a number of truck crops declined in November on heavy marketings from late-producing States and moderate marketings of new crops from the Southern States. Market prices of vegetables generally in mid-November were below prices a year earlier.

Total acreage of 13 fall and winter vegetables was estimated at about 10 percent larger this season than a year earlier, but acreage and production of all market vegetables in 1939 are expected to be slightly smaller than in 1938. Early indications point to larger fall and winter crops of snap beans, cucumbers, eggplant, and green peppers, and smaller crops of carrots, cauliflower, celery, kale, and tomatoes.

Prices of potatoes strengthened in early November on reports of crop deterioration. The late crop was estimated at 283 million bushels (excluding the early crop in California), compared with 309 million in 1937, and with 299 million the 1927–36 average. The relatively low prices this season are expected to cause growers to reduce acreage materially in 1939.

FRUITS: Better Demand

Increased domestic demand for fresh fruits is suggested by the current and prospective improvement in consumer incomes. Pears and grapes were a little higher priced in late November compared with October. There was relatively no change in apple prices. Oranges have gone down in price as shipments from the new Florida crop have increased. Grapefruit prices recovered from the extremely low levels of October.

A feature of the fruit situation, favoring the outlook for exports of fruits from the United States, was the signing of trade agreements with the United Kingdom and Canada on November 17. The agreements, effective January 1, 1939, abolish United Kingdom duties on canned grapefruit and certain fruit juices, and substantially reduce the duties on fresh apples and pears, and some canned fruits.

DAIRYING: Price Stability

Continued heavy production of milk and dairy products, but relatively small consumption, and large stocks of dairy products in storage are features of the dairy situation. Price

stabilizing factor has been the Government buying of butter for storage and relief distribution. Prospects for improvement are in the better business conditions and the rise in consumer incomes.

Milk production on November 1 was the largest on record for that date, but receipts of fluid milk and cream in principal eastern markets were much smaller this fall than last. Production of principal manufactured dairy products in September was the largest on record for that month. Consumption of manufactured dairy products has been relatively high as compared with preceding years, but low compared with current production.

Stocks of butter on November 1 were about 20 percent above the preceding peak for that date in 1933. Of total stocks of 194 million pounds, the Dairy Products Marketing Association held 102 million pounds, and relief agencies held 8.6 million pounds. Stocks in trade hands totaled 83 million pounds in contrast with 99 million a year earlier. Stocks of American cheese on November 1 were 12 percent above the preceding peak for that date in 1936.

POULTRY AND EGGS:
Developments

Farm egg production made a new high record for November 1. Even though the number of layers per farm was below the November 1 average for the 10 years 1927–36, total egg production was about 12 percent above the previous high levels of November 1931 and 1937 and about 23 percent above the 10-year average. Records were equalled or broken in all regions of the country.

The average number of pullets not yet of laying age on hand November 1 was 33.5 pullets compared with 31.3 in 1937. The increase was most pronounced in the West North Central States, where a gain of about 20 percent was shown over the record low level to which the number of pullets had fallen in that area last year.

Other developments in early November included a continued increase in marketings of dressed poultry, a greater-than-seasonal decline in the farm price of chickens, and a less-than-usual advance in egg prices. The increased hatch this year has been reflected in increased marketings and larger-than-usual into-storage movement of dressed poultry.

The net out-of-storage movement of shell eggs during October was below average, amounting to 1,521,000 cases, compared with an average of 2,019,000 cases during the preceding 5 years. November 1 stocks were 1,914,000 cases less than on November 1, 1937, and 1,436,000 cases less than the November 1 average.

The 1939 AAA Farm Program

FORMAL approval of details of the 1939 AAA Farm Program in mid-November assures farmers that they will have necessary information on next year's program well in advance of the spring planting season and considerably earlier than they have received previous AAA programs. The general outlines of the program were made public in mid-August, and the wheat acreage allotments for 1939 were announced in July.

The basic framework of the 1939 program is essentially the same as the 1938 program, although certain administrative improvements have been made. It continues to provide for soil conservation, for a level of agricultural production that will meet the country's domestic requirements and all possible exports, and for adequate reserves. The individual farmer participates through seeding crops within his acreage allotments and carrying out soil-building practices.

THE 1939 program sets up a national soil-depleting goal of between

270 and 285 million acres, which is about 5 million acres less than the 1938 goal and roughly 30 million acres less than the acreage of soil-depleting crops grown during the 1928–32 period. Under the conservation phases of previous programs a good part of this former acreage in soil-depleting crops has been put to soil-conserving crops or handled so as to prevent erosion of various kinds. The difference in acreage of soil-depleting crops sought in the 1939 program and that in the 1928–32 period represents in part the fundamental adjustments which the loss of export markets, increased mechanization of agriculture, and other changes have forced upon American farmers and which the AAA programs have sought to bring about in an orderly fashion.

The 5-million acre reduction from 1938 largely represents the smaller wheat goal which the 1939 program provides. Goals for the other major crops are virtually the same in the new program as they were in 1938, indicating that individual farm allotments will be very similar to what they were in 1938.

The desirable national acreage goals for 1939 are:

	Acres	
Corn	94,000,000 to	97,000,000
Wheat	55,000,000 to	60,000,000
Cotton	27,000,000 to	29,000,000
Rice	850,000 to	880,000
Peanuts	1,550,000 to	1,650,000
Potatoes	3,100,000 to	3,300,000
Tobacco:		
Flue-cured	860,000 to	900,000
Burley	375,000 to	400,000
Fire-cured and dark air-cured	160,000 to	170,000
Cigar filler and binder	85,000 to	90,000
General crops (including commercial truck)	145,000,000 to	150,000,000

(The goal for general crops includes corn and potato acreage, not grown in commercial areas but included for the goals for those crops. For this reason the above goals total more than 270 to 285 million acres.)

THE 1939 program offers considerably increased payments to the producers of cotton, corn, wheat, and rice. The 1939 program provides for conservaton payments to participating farmers on the basis of the $500,000,000 annual appropriation authorized in the Agricultural Adjustment Act of 1938, and $212,000,000 in price adjustment payments to cotton, wheat, corn, tobacco, and rice producers. These price adjustment payments, or so-called "parity" payments will be available only to farmers who stay within their acreage allotments.

The 1939 conservation payments and the price adjustment payments will be made on the normal yield of the 1939 acreage allotments. The following are the rates on conservation payments and the anticipated range of price adjustment payments:

Cotton, per lb., 2¢ plus	1.6¢ to 1.8¢
Corn, per bu., 9¢ plus	5.0¢ to 6.0¢
Wheat, per bu., 17¢ plus	10.0¢ to 12.0¢
Rice, per cwt., 10¢ plus	12.0¢ to 13.0¢

Price adjustment payments on tobacco are expected to be negligible, as tobacco prices are near parity and these payments are based to a large extent on the difference between farm and parity prices.

The conservation payment rates for tobacco vary from $\frac{8}{10}$ of a cent a pound to 1.5 cents a pound, depending upon the type. The potato payment will be 3 cents a bushel and the payment on peanuts at $3 a ton. In addition, allowances are made for vegetable and orchard acreage and for acreages in general crops, soil-conserving crops, and for the restoration land program in the Great Plains.

OTHER new provisions in the 1939 program include the establishment of commercial vegetable allotments in designated areas, additional flexibility for the benefit of the small farmer—particularly where there is need for more food and feed crops for home use, the limitation of AAA payments to $10,000, the addition of certain soil-building practices, and other minor changes all designed to make the 1939 program more applicable and effective than this year's program.

R. M. Evans,
Agricultural Adjustment Administration.

Farm Exports Under Trade Agreements

IN SPITE of the distorting effect on trade data produced by droughts, fluctuations in industrial activity, and a number of other factors during the past 4 years, available data on foreign trade in agricultural products indicate that trade agreements have substantially benefited American farmers. Agricultural exports to countries with which trade agreements were in effect by 1937 have risen many times more rapidly than those to other countries. The trade agreements have been drawn up in such a way as to prevent imports of commodities competitive with domestic farm products from disturbing American markets. The four agreements concluded during 1938, especially that with the United Kingdom, should greatly increase the extent to which farmers benefit from the Trade Agreements Program.

The following table compares the course of our trade with trade-agreement countries to that of our trade with other countries. Agreements with the 16 countries considered separately in the table were all in effect by August 1937. Most of these agreements went into effect during 1936. Agreements concluded during the current year are not considered because none of them has appreciably affected data for the period shown.

EXPORTS of United States farm products to the 16 countries rose by 102 million dollars or 55 percent from the fiscal year 1935–36 (when only three of the agreements were in effect throughout the year) to the fiscal year 1937–38. Farm exports to all other countries rose by only 20 million dollars or 3 percent for the same period. In the case of nonfarm products, there was little difference between the increase in exports to trade agreement countries and that in exports to other countries.

Since our largest farm export is cotton, which did not suffer greatly from foreign trade barriers and could not, therefore, be directly benefited by trade agreements to any large degree, figures for farm exports other than cotton are significant. These are presented in the following table, where percentages of increase for exports to trade-agreement countries and nontrade-agreement countries are seen to

United States Foreign Trade With Trade-Agreement Countries [1] and With Other Countries

	Year ended June 30				
	1935–36	1936–37	1937–38 [2]	Increase (+) or decrease (−) 1937–38 over 1935–36	
U. S. (domestic) exports:	*Million dollars*	*Million dollars*	*Million dollars*	*Million dollars*	*Percent*
Of all commodities:					
To the 16 countries	805	1,034	1,236	+431	+54
To all other countries	1,570	1,757	2,123	+553	+35
Of farm products:					
To the 16 countries	186	207	288	+102	+55
To all other countries	580	525	600	+20	+3
U. S. imports (for consumption):					
Of all commodities:					
From the 16 countries	934	1,194	970	+36	+4
From all other countries	1,274	1,698	1,361	+87	+7
Of agricultural commodities:					
From the 16 countries	468	600	454	−14	−3
From all other countries	674	937	701	+27	+4

[1] Belgium; Brazil; Canada; Colombia; Costa Rica; Cuba; El Salvador; Finland; France, including her colonies, dependencies, and protectorates other than Morocco; Guatemala; Honduras; Haiti; Kingdom of the Netherlands; Nicaragua; Sweden; and Switzerland.
[2] Preliminary.

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United States Domestic Exports of Farm Products Other Than Cotton and Cotton Linters to Trade Agreement Countries and Other Countries

	Year ended June 30				
	1935–36	1936–37	1937–38[1]	Increase (+) or decrease (−)	
				1937–38 over 1935–36	
	Million dollars	*Million dollars*	*Million dollars*	*Million dollars*	*Percent*
To the 16 countries	98	110	204	+106	+108
To all other countries	269	239	372	+103	+38

[1] Preliminary.

be 108 percent and 38 percent respectively.

MORE than ordinary caution must be exercised in drawing conclusions, from these figures, about the effects of trade agreements. Unusually wide fluctuations have occurred in two other factors affecting the trade. In the first place, two of the greatest droughts in our history held down farm exports and boosted competitive imports from 1935 to 1937, while bountiful harvests in 1937 and 1938 have had the reverse effect on our trade. In the second place, the effect of these ups and downs in production has been magnified by the ups and downs of general economic activity. Our short crops were marketed during years of exceptionally good general demand; so that the shortage of exportable supplies and the need for imports was even greater than would otherwise have been the case.

On the other hand, our bumper harvests were faced with low industrial production, high unemployment, and an inactive market; so that exportable surpluses mounted rapidly and imports fell to negligible proportions. Hence it is important to carry this analysis further than the general changes in trade illustrated by the foregoing tables. Such further analysis, while not conclusive, seems to support the favorable conclusions indicated by the general figures.

OF the 106-million-dollar increase in our exports of farm products other than cotton to the 16 trade-agreement countries during the period under consideration, the largest part (a rise of 45 million dollars or 141 percent) was recorded for exports to Canada. Practically all of this increase occurred in items upon which Canadian duties were reduced by the terms of the trade agreement. Furthermore, expansion in the quantity of our exports to Canada of some of the leading commodities on which Canadian duty reductions were granted was proportionately much greater than the expansion of our exports of those same commodities to the rest of the world. This was true not only for some of the drought-affected commodities such as wheat and oats, which expanded by enormous percentages under the influence of 1937 crops, but also of a number of other leading items such as grapefruit and fresh apples.

These facts are especially significant because Canada's economy is closely linked to our own. Her cycle of business activity has been very similar to that in the United States and, to some extent at least, her farm production suffered from the same droughts which we experienced. Consequently, our farm trade with Canada might be expected to be distorted somewhat less by these two factors than has that with other countries.

THE second largest part of the 106-million-dollar increase occurred in exports of farm products other than cotton to the Netherlands, which rose by 28 million dollars or 224 percent. Here again, the increase took place in items upon which the Netherlands' duties were reduced by the terms of the trade agreement. The third largest increase occurred in exports to Belgium which rose by 19 million dollars or an increase of 208 percent. The fourth largest increase was a rise of 8 million dollars or 53 percent in our exports to Cuba.

Not all trade-agreement countries showed equally favorable results. Our farm exports to 5 of the 16 countries (Colombia, France, Haiti, Honduras, and Nicaragua) made a less favorable record than did those to non-trade-agreement countries as a whole. It is to be noticed, however, that, except for France, these are predominantly agricultural countries where farm products could not, by the very nature of international trade relations, figure prominently in the trade agreements. In the case of France, the poor showing was, of course, due to the failure of French economic activity to recover substantially from the 1932 depression.

CORROBORATION for the conclusions to which the above figures seem to point is found in the import statistics of the trade-agreement countries themselves. Such statistics are available from 1934 to 1937 for the 11 most important of the 14 countries with which trade agreements were in effect by 1936. In 10 of these 11 countries, the United States proportion of total imports has risen since the conclusion of the trade agreements. The only exception is Brazil where large sales by Germany had, until the beginning of 1938, increased its share in the Brazilian market and reduced the share of other countries, including the United States. The United States proportion of the total imports of all of the 11 countries rose steadily from 16.5 percent in 1934 to 20.1 percent in 1937.

R. B. SCHWENGER.

An article dealing with United States imports under the reciprocal trade agreements will be published next month.

The Discharged Worker Looks to the Farm

WHEN industry "lays off" its workers, many of the discharged men look to the farms as havens of security. Some embrace part-time farming or suburban gardening; many seek employment as farm hands. This resorting to the farms is especially marked in times of depression, but there are also seasonal shifts during months of slack industrial employment in any year. Even when annual peaks of industrial and agricultural activity coincide, there is a certain amount of shifting of workers from industry to agriculture.

Public agencies studying social and economic problems are interested in the normal and abnormal "shuttling" of laborers between industry and agriculture, especially those agencies dealing with social security problems and the practicability of extending the benefits of social security legislation to farm laborers. Besides any desire to safeguard the security of farm as well as industrial workers, difficult administrative problems would need to be solved.

IN the hope of adding to the available information regarding farm laborers, the Social Security Board requested the Bureau of Agricultural Economics to include in a farm labor survey last summer a question as to the number of farm laborers holding social security cards. Farm laborers as such are specifically excluded from Federal social security benefits, but they may have social security status to the extent of past or future industrial employment, or they may have a social

security number through voluntary request. Anyone may obtain a social security number, but he can receive benefits only to the extent that he has been employed in specified occupations and both he and his industrial employers have made the required money contributions to the social security fund.

The farm labor survey was made in North Dakota during the wheat harvest, cooperatively by the Bureau of Agricultural Economics, the Farm Security Administration, and the North Dakota Agricultural Experiment Station. A total of 2,152 laborers were interviewed on farms, consisting of male and female farm family laborers, annual or seasonal hired laborers, local hired harvest laborers, transient hired harvest laborers, and exchange laborers.

MORE than 58 percent of the 373 transient hired harvest laborers and nearly 36 percent of the 492 local hired harvest laborers had social security numbers. Only 12 percent of 874 male farm family laborers had social security numbers, and only 1 percent of the 158 female farm family laborers. About 12 percent of 139 annual or seasonal hired laborers, and about 10 percent of 116 exchange laborers had social security numbers.

The survey covered a small sample and cannot be used even to generalize as to the proportion of farm laborers of different status who may have been engaged in industrial employment in the past. More than 1,100 laborers seeking harvest work also were interviewed at public and private employment agencies, in railroad freight yards, "jungles," and other places where transient laborers congregated. A larger proportion of this unemployed than any of the employed farm groups included in the survey had social security numbers.

JOSIAH C. FOLSOM.

Four Decades of Farmer Cooperation

SINCE the turn of the century cooperating farmers have tried three forms of cooperative organization. During the first two decades they placed their faith in local associations; in the third decade they supported large-scale marketing organizations, and since about 1935 they have been concerning themselves with medium-sized organizations. In all three periods there were some cooperatives representative of each type.

During the first period the thinking was dominated by hopes bound up with the local shipping association, in the second period the farmers staked their desire for success on the large-scale organization and monopoly, and in the third period they are charting their course on the theory that the right road for them lies between the two that failed them in the past.

AT the beginning of the century there were 857 farmer creameries and cheese factories, 123 elevator associations, 103 associations, including one large organization, for handling fruits and vegetables, 10 livestock shipping associations, and 40 associations handling other products—a total of 1,133 marketing cooperatives.

The increase in number of marketing associations was 111 the second year, 133 the third, and 177 the fourth. By the close of 1906 the number of associations had doubled; by 1910 there were three times as many organizations as in 1900. By 1915 the increase had been more than fivefold.

The peak of the local association movement was reached in 1922 when there were 11,774 active marketing associations—more than 10 times the number in 1900. There were also 1,958 purchasing associations.

The increase in number of functioning associations was not uniform for all groups. The number of associations handling grain jumped from 123 in 1900 to 4,312 in 1921. The increase in livestock associations was from 10

in 1900 to 2,327 in 1924, which was also the peak year for the number of associations handling dairy products. The rate of increase for most groups had declined by 1921. Not all the active associations in 1921 were local organizations, but more than nine-tenths were.

DURING the "primary post war depression," 1920–22, the prices of farm products dropped precipitously. The price index fell from 213 in 1919 to 125 in 1921. Farmers began speaking out in meeting.

Cotton farmers with representatives from all the agencies interested in cotton met in Montgomery, Ala., April 13 and 14, 1920, in an effort to develop a cooperative marketing program. Almost before the committee appointed to draft a plan of organization started work the convention was stampeded by an enthusiastic and persuasive attorney from California who pictured the prune growers, the raisin growers, and others as enjoying great prosperity because they had cooperatives which handled the greater portion of these fruits. Before the Montgomery convention adjourned we were in the era of large-scale cooperatives, in spirit at least.

At the close of 1920 there were 16 large-scale centralized cooperatives with 49,746 members; at the close of 1921, 31 associations with 249,632; at the close of 1922, 48 associations, 524,933 members; 1923, 65 associations, 709,669 members; 1924, 74 associations, 826,827 members; and 1925, 74 associations with 879,190 members. The largest of the organizations boasted a membership of 109,000.

There were State-wide associations for the "orderly" marketing of cotton; regional associations for marketing tobacco; State and regional associations for handling wheat; associations for marketing broomcorn, white potatoes, onions, peanuts, rice, sweetpotatoes, olives, alfalfa, milk, melons, poultry, and tomatoes.

The California attorney introduced ironclad contracts. In December of 1922 he listed 55 associations which he had organized or which he had represented. He prepared a Standard Marketing Act which by February 1, 1924, had been enacted in 29 States.

MANY of the new associations were in the Southern States. In 1919 there were but few cooperators south of the Ohio River, except in Florida; in 1924 there were many; but by 1929 there had been much backsliding in all the States except Oklahoma. The reason for the waning in interest and performance is that people in mass cannot learn to become loyal cooperators in 5 years even with the help of ironclad contracts.

By 1929 the farmers were as discontented as in 1921. Congress, in an effort to help them, passed the Agricultural Marketing Act which provided for a Federal Farm Board. The Board was given authority to recognize organizations as stabilization corporations even though they might undertake to protect the farmer against declining prices. Congress by successive acts appropriated one-half billion dollars for making loans to cooperatives. Several giant sales agencies to operate on a Nation-wide basis were sponsored and aided with loans.

Perhaps a third of the large-scale organizations formed during the years 1921 to 1925 and those sponsored by the Federal Farm Board are still in existence, although most of them have been reorganized once or twice. The three largest of the centralized organizations lasted little longer than the period covered by their ironclad contracts. Not much was accomplished in raising the price level.

The large-scale era came to a close as the Farm Credit Administration's 13 banks for farmers' cooperatives began operating. These banks are partially under the control of the cooperatives which borrow from them. This type of democracy, which implies responsibility as well as power, is becoming an important factor in the present farmer-cooperative movement.

THERE are today about 10,000 local associations, 8,000 engaged in marketing and more than 2,000 in purchasing. These are much larger than those of the first two decades both as to membership and amount of business transacted per association. There are also large-scale associations, but they are not as large as those of the early 1920's. Both small and large associations are on the whole being operated more efficiently than those of 15 or even 10 years ago. The members of the associations are better informed. We are in a less spectacular era than that prior to 1935, but in a more practical one.

A recent count of active farmers' cooperatives included 10,900 organizations. There were 2,619 in the grain group; the dairy group included 2,421 and the fruit and vegetable group, 1,164. The marketing cooperatives have a membership of 2,500,000 and transacted business during the 1937–38 marketing season to the amount of $2,050,000,000.

The group made up of purchasing cooperatives is growing most rapidly of all the groups. It contains 2,600 associations with 900,000 members and handled a total business of $350,000,000 during the last marketing season. To this might be added the $117,000,000 of supply business reported by the marketing cooperatives, less the $27,000,000 marketing business reported by the purchasing group. After adjustments the marketing business would be $1,960,000,000 and the purchasing business $440,000,000.

MOST of the associations now being formed are local in character. Many of the new organizations are in the Southern States where the cooperative cotton gin is gaining in favor. In the Northern States, purchasing associations are being organized, also associations for operating trucks on a cooperative basis. There has been an increase in associations for bargaining as to the prices to be paid to their producing members for milk, canning crops, sugar beets, and other products. Purchasing associations are uniting into federations which are undertaking the manufacture of farm supplies such as feed, fertilizer, lubricating oil, and farm machinery.

R. H. Elsworth,
Farm Credit Administration.

The 1938 Corn Loan

GOVERNMENT loans of 57 cents per bushel are now available on 1938 corn produced on farms in the commercial corn area on which this year's corn acreage did not exceed the corn allotment. Similar loans are available at the rate of 43 cents per bushel in the noncommercial corn area on farms on which the acreage of soil-depleting crops in 1938 did not exceed the total soil-depleting allotment.

The Agricultural Adjustment Act of 1938 provides that corn loans are to be available in the commercial corn area at 70 percent of the parity price when the crop does not exceed a normal year's domestic consumption and exports by more than 10 percent. This year's corn crop of 2,481,000,000 bushels is less than 10 percent above that level. The estimated parity price of corn is 81 cents per bushel. Consequently the loan rate was established at 57 cents per bushel. The rate in the noncommercial area is established by the Act at 75 percent of the rate to farmers within the commercial corn area.

The commercial corn area for 1938, where the 57-cent loans are available, includes 566 counties in 12 States—Illinois, Indiana, Ohio, Michigan, Wisconsin, Minnesota, South Dakota, Iowa, Nebraska, Missouri, Kansas, and Kentucky. The 43-cent loans are available in all other sections of the United States where corn is produced in appreciable quantities.

FARMERS may take advantage of the corn loan this year to as great an extent as in 1933–34 when about $122,000,000 was loaned in the Corn Belt on about 271,000,000 bushels of farm-stored corn. The average farm price of corn in the commercial corn area in November was about 35 cents per bushel. The 1938 crop is somewhat less than normal, but there was an unusually large carry-over on October 1, of about 362,000,000 bushels resulting from the above average 1937 crop and the low livestock numbers following the droughts. The total supply of corn for 1938–39 is nearly 5 percent larger than the average from 1928 to 1932. The number of animal units is expected to be about 8 percent below the 1928–32 average on January 1, 1939.

GOVERNMENT corn loans were first made in November 1933, at a rate of 45 cents per bushel to relieve farmers from the low prices which followed the 1931 corp and which were aggravated by the bumper crop of 1932 and the large crop in 1933. The 1933–34 loans served to discourage excessive livestock feeding and made larger quantities of feed available for use after the 1934 drought. Since that time loans have been available to farmers every year, but they have been less important because of the improved farm incomes and the higher corn prices.

In 1937 a larger-than-normal corn crop of 2,645,000,000 bushels was harvested. With the number of feeding animals at a low level, corn prices declined considerably. When the 50-cent corn loan was made available to farmers in the Corn Belt in the fall of 1937 they stored about 47,000,000 bushels of corn under seal and borrowed about $23,000,000 from the Commodity Credit Corporation.

On August 27, 1938, a renewal loan of 57 cents per bushel on 1937 corn was made available to farmers who cooperated in the Agricultural Conservation Program for 1937 and did not exceed their corn acreage allotments in 1938. About 25,000,000 bushels of corn were resealed on farms by December 1, under loans amounting to $14,000,000.

THE Agricultural Adjustment Act of 1938 provides that corn loans are to be made at a definite schedule of rates in years when the crop exceeds a normal year's domestic consumption and exports or the price is less than 75 percent of parity, unless corn marketing and storage quotas are required to be proclaimed under the Act but are not approved in a referendum by the farmers affected. The rates specified vary inversely with the size of the crop, with the rate lower on a large crop than on a small one.

Secretary Wallace announced on August 10 that there would be no referendum on corn marketing and storage quotas for the 1938 crop. That determination was based upon a normal year's domestic consumption and exports of 2,470,000,000 bushels, the 10-year average from 1927–28 to 1936–37, adjusted for current trends as required by the Act.

The 1937–38 corn marketing year ended on September 30. The Act specifically states that a normal year's domestic consumption is to be based upon the average consumption during the 10 years immediately preceding the year in which the determination is made. On that basis the present normal year's domestic consumption and exports, representing the 10-year average from 1928–29 to 1937–38 inclusive, adjusted for current trends, was established at 2,418,000,000 bushels.

D. A. FITZGERALD,
Agricultural Adjustment Administration.

Another large domestic supply of edible fats and oils (vegetable and animal oils) is in prospect for this season—a sharp reduction in cotton-seed oil about offset by increased supplies of other vegetable oils and of lard.

Shifts in the Dairy Industry

THE period from 1934 to 1938 was the only period in the last 70 years in which there was a significant decline in the number of milk cows. Even though there was a steady upward trend in milk cow numbers prior to 1934, there were marked differences in the rates of increase in different sections of the country. In the 35-year period, 1870–1904, the number of milk cows in the United States increased at the rate of 1.73 percent per year. In the North Atlantic States, the rate of increase was only 0.51 percent per year, the smallest for any section of the country. The rate of increase in the Southern States was also relatively low. Numbers increased most rapidly in the Western and West North Central States.

In the North Atlantic States numbers reached a peak in 1905, and during the next 30 years the trend was slightly downward. This was the only section of the country in which the trend was downward. For the United States as a whole, the increase in the period 1905–34 was at the rate of 1.11 percent per year. During this 30-year period the rate of increase in the South Atlantic States was relatively low, but in the South Central States higher than for the entire country. Numbers increased most rapidly in Western and West North Central States, 2.77 and 1.65 percent per year respectively.

In the 1870's nearly 29 percent of all the milk cows in the United States were in the North Atlantic States. Sixty years later in the 1930's only 13 percent were in that area. In the earlier period only 16 percent were in the West North Central States, but in the 1930's about 28 percent. The relative importance of the East North Central States was about the same in both periods. In recent years about 20 percent of the milk cows have been in the South Central States.

THE shift in production of manufactured dairy products has been more marked than the shift in the number of milk cows. Total production of manufactured dairy products (milk equivalent) in the North Atlantic States reached a peak in 1899 according to the Census. Since then the general trend in production of manufactured dairy products in that area has been sharply downward. Milk has been diverted from manufacturing to fluid uses. In 1899 about 28 percent of the total output of manufactured dairy products was in the North Atlantic States. In the last 8 years, however, production in this area has been only 6 percent of the total.

Number of Milk Cows and Rates of Increase, by Regions, for Selected Periods, 1870–1938

Region	Average rate of increase in number of milk cows per year		Number of milk cows		Percentage of total number of milk cows in each region		Percentage increase in cow numbers, 1870's to 1930's
	1870–1904	1905–34	1870–79 average	1930–38 average	1870–79	1930–38	
	Percent	*Percent*	*Thousands*	*Thousands*	*Percent*	*Percent*	*Percent*
United States	+1.73	+1.11	10,596	25,113	100.0	100.0	137
North Atlantic States	+0.51	−0.43	3,046	3,189	28.7	12.7	5
East North Central States	+1.49	+1.08	2,623	5,940	24.8	23.7	126
West North Central States	+3.46	+1.65	1,701	6,979	16.1	27.8	310
South Atlantic States	+0.71	+0.50	1,127	1,888	10.6	7.5	68
South Central States	+1.08	+1.43	1,779	4,909	16.8	19.5	176
Western States	+3.72	+2.77	320	2,208	3.0	8.8	590

In the East North Central States manufactured production has increased about as rapidly as in the United States as a whole, and the proportion produced in that area has shown relatively little change. The proportion produced in the West North Central States increased from 14 percent of the total in the 1870's to 26 percent in the 1900's and 35 percent in the 1930's. Nearly two-thirds of all the manufactured dairy products produced in the United States are produced in the 12 North Central States. Production in the Western States also increased more rapidly than in the United States as a whole. In the 1930's about 13 percent of the total production was in the South Central States and 5 percent in the South Atlantic States.

THE distribution of manufactured production is somewhat different than the distribution of milk cows. There are marked differences in the way the milk is utilized in different sections. In the last 4 years in the North Atlantic States only about 16 percent of the milk produced was utilized in the production of manufactured dairy products, exclusive of farm butter. The great bulk of the milk was utilized as fluid milk and

Production of Manufactured Dairy Products, by Regions, for Selected Periods, 1869–1937

Region	Production of manufactured dairy products (milk equivalent) [1]			Percentage of total production in each region			Percentage 1930–37 average production is of 1899–1909
	Average 1869 and 1879	Average 1899 and 1909	Average 1930–37	1869–79	1899–1909	1930–37	
	Million pounds	*Million pounds*	*Million pounds*	*Percent*	*Percent*	*Percent*	*Percent*
United States	15,684	36,138	56,973	100.0	100.0	100.0	158
North Atlantic States	6,667	7,605	3,318	42.5	21.0	5.8	44
East North Central States	4,539	10,386	17,208	29.0	28.7	30.2	166
West North Central States	2,248	9,274	19,938	14.3	25.7	35.0	215
South Atlantic States	764	2,159	2,638	4.9	6.0	4.6	122
South Central States	1,057	4,462	7,337	6.7	12.4	12.9	164
Western States	409	2,252	6,534	2.6	6.2	11.5	290

[1] Including farm butter and cheese.

Production of Milk and Utilization in Farm Butter and Manufactured Dairy Products, by Regions, Average 1934–37

Region	Milk production [1]	Farm butter production (milk equivalent)	Manufactured products produced exclusive of farm butter	Percentage of total milk utilized for—	
				Farm butter	Manufactured products exclusive of farm butter
	Million pounds	*Million pounds*	*Million pounds*	*Percent*	*Percent*
United States	105,142	10,850	46,544	10.3	44.3
North Atlantic States	16,702	722	2,681	4.3	16.1
East North Central States	28,215	1,052	16,748	3.7	59.4
West North Central States	26,612	1,857	17,663	7.0	66.4
South Atlantic States	6,776	2,167	485	32.0	7.2
South Central States	15,305	4,451	3,081	29.1	20.1
Western States	11,532	601	5,886	5.2	51.0

[1] Includes milk production by cows on farms plus an estimate for cows not on farms.

cream. About 4 percent was utilized as farm butter. In the East North Central States manufactured products utilized 59 percent of the milk, and farm butter 4 percent. In the West North Central 66 percent was utilized for manufactured products and 7 percent for farm butter. In the Western States about half of the milk is utilized for manufactured products. In the Southern States more milk is utilized in the production of farm butter than in all the factory-made dairy products combined. Farm butter and fluid uses are the important outlets for milk in the South. In the South Atlantic States only 7 percent and in the South Central States 16 percent of the milk produced is utilized in factory production.

SINCE the Agricultural Adjustment Administration programs have been in effect there has been a great deal of interest and concern as to the effect of these programs on dairy production. Even before these programs came into effect there were marked differences in the trends in milk cow numbers and dairy production in different sections of the country. During the 1930's we had the worst business depression in history and two of the most serious droughts. It is not possible to say what effect the AAA programs have had on dairy production. Most of the changes in production have been due to other factors.

The outlook for the next few years is for increasing numbers of milk cows. It seems probable that all sections of the country will share in the increase. The number of heifers added to milking herds in 1938, as indicated by the inventory of numbers as of January 1, was more than enough to provide for normal replacements in all sections of the country. The number of heifers to be added to herds in 1939 is also relatively large.

The relatively high price of milk cows, abundant feed supplies, and relatively favorable prices of dairy products in relation to feeds has stimulated the saving of heifers and tended to reduce culling.

E. E. VIAL.

More Money to Spend

(A summary of "The Outlook for Farm Family Living in 1939," United States Department of Agriculture)

NET cash income available to farm families for living expenses and getting ahead financially is expected to be somewhat higher in 1939 than in 1938. Higher net income from farm marketings is anticipated for 1939, Government payments probably will exceed 1938 payments, income from nonfarm sources may be a little higher in 1939.

As incomes rise, farm families tend to spend part of the increase for living but they apply a larger share than do city families toward getting ahead financially—paying off debts and making improvements on the farm. Any general increase in farm income will tend toward bettering the general net worth situation of families having net money incomes of $600 or more. Below this income line, farm family living has first claim on funds, and only the small family with a goodly supply of farm-furnished food can devote cash to increasing its net worth.

DOLLAR for dollar, the farm family's money income is expected to stretch about as far next year as this, since the general level of prices of commodities bought for living is expected to change little in 1939 from late 1938. With cash income in 1938 more limited than in 1937, many farm families may plan to enlarge their programs of food production for home use in 1939, thus releasing money for other purposes. Even with a large home-production program, food still tends to make the major demand on the cash for living.

During the 1930's there has been a trend toward broadened social contacts

for farm families through improved transportation and communication. Better roads, more widespread ownership and greater use of automobiles, and an increased number of radios have contributed to this development. About three-fifths of all farm families now have radios, and there is likelihood of a further increase in 1939.

There is evidence that a larger proportion of farm than city families own automobiles. Automobiles were owned by more than 85 percent of the native-white nonrelief families of farm operators included in a 1935–36 study of family living, except in the Southeast and in Vermont. Even in these areas the percentage exceeded 60. Many of the cars had been bought in the used-car market—about 2 used cars to each new one bought during that year.

TRENDS toward more comfortable living are evidenced by electrification and other improvements of farm homes and by purchases of household equipment that lightens labor. Electricity now is used on 18 percent of all farms as compared with 13 percent in 1930. These trends bid fair to continue in 1939—in part because of the Government program of encouraging rural electrification, and in part because of anticipated income increases.

WAYS of spending of farm families are being changed by these new ways of living. In two-thirds of the farm areas included in a 1935–36 study of family living, expenditures for the purchase and operation of the family car took about one-sixth of the aggregate expenditures for all living of nonrelief native-born, white families of farm operators. A 1922–24 study showed less than one-tenth of expenditures allocated to the family's use of the automobile.

Increased outlays for the automobile and household operation tend to crowd clothing to fourth place in order of amount spent, with food still ranking first.

Many Communities Get New Cotton Services

THROUGH early December, 308 cotton communities had been approved as eligible to receive the new cotton classification and market news services authorized at the last session of Congress. Arkansas led all other States with a total of 56 organized communities meeting qualification requirements. Second was Texas with 55 qualified communities. Georgia—long a stronghold of one-variety community development—ranked third with 50 qualified groups.

Other States were Louisiana, with 32 approved communities; Alabama, 19; Arizona, 19; Florida, 13; California, 14; Mississippi, 10; North Carolina, 9; Tennessee, 9; Oklahoma, 9; New Mexico, 7; South Carolina, 5; Missouri, 1. The 308 organized cotton improvement communities report a total of about 450,000 acres planted to their adopted varieties.

The extension of cotton classification and market news services to growers is part of a general campaign for improving all American cotton. Apparently the campaign is bearing fruit, since 54 percent of the cotton ginned to October 1 this year was 1 inch and longer in staple length, as compared with only 33 percent during the like period in 1937.

The increase in the proportion of long staple cotton this year was due in part to favorable weather conditions and fiber development, but a part of the gain must be attributed also to the South-wide trend toward planting improved varieties of cotton. It is expected that next season about 1,000 communities will be able to qualify for the classification and news services.

In general, organized groups appear to have had little difficulty in complying with the Bureau's regulations.

W. B. LANHAM.

Alcohol Motor Fuel in the United States

THE production of alcohol or similar compounds from agricultural materials and the blending of such compounds with gasoline for motor fuel purposes has been advocated in the United States in the past as an expedient for raising crop prices, or for utilizing surplus crops or crop byproducts so as to yield increased farm income. The idea may be considered also from the standpoint of petroleum conservation.

Because of the paramount importance of motor fuels in modern civilization, numerous efforts have been made in recent years to develop substitute fuels with which to supplement petroleum resources, principally in foreign countries whose natural petroleum resources are inadequate—especially for defense needs. In some cases this activity has been interrelated with a national agricultural program. This foreign experimentation with agricultural materials as fuel sources has naturally aroused great interest in the United States, since here, as well as abroad, disturbed agricultural conditions have been experienced due to variations in farm crop prices resulting from over- or under-production, fluctuating demand, and the like.

IN this country we had originally a considerable part of the world's supply of petroleum, and there has as yet been little indication of approaching shortage. Prices of petroleum products are extremely low, in contrast to the usual foreign situation. However, at present rates of consumption, eventually the supply will diminish, with corresponding price advances, and attention should be given to the situation then to be faced. Whether our petroleum supply will last 10 or 30 years is relatively immaterial. The supply is irreplaceable and conservation should be practiced up to the time when a better source of motive power is developed to commercial use.

We now use about 22 billion gallons of gasoline annually, equivalent to about one billion barrels (42 gallons) of crude petroleum. Known reserves of petroleum are estimated at 13 to 15 billion barrels, and discovery of new deposits thus far has about equalled the rate of diminution, but whether this rate can be maintained in the future is problematical. Any source of fuel should be relatively inexhaustible, and since alcohol can serve as a replacement, and can be continuously produced from vegetation, it is a logical substitute, although lacking in equivalent fuel or heat value in comparison with present gasoline. There are other comparative disadvantages and advantages.

AS a fuel for use in present motor cars, alcohol or alcohol-gasoline blends will cost more than straight gasoline, and this relative difference in fuel cost must be considered. Furthermore, because present crops are inadequate for a large-scale alcohol blend motor fuel program, use of considerable portions of present crops will advance raw material prices. This may or may not benefit the farmer in the long run, but any large-scale production of alcohol will probably further increase the cost of the alcohol.

As a year-to-year average, it is doubtful if more than 15 percent of any present carbohydrate crop could be made available for alcohol production. This figure includes surpluses, culls, and wastes. Use of greater amounts would tend to cut into normal supply and raise prices, causing cost increases in alcohol raw materials. Thus, any present attempt toward large-scale alcohol production would meet cost limitations. Fifteen percent of the 18 principal carbohydrate crops, on the present scale of farm production, would yield perhaps 1,600,000,000 gallons of alcohol, sufficient to make a 7.0 to 7.5 percent blend of the annual gasoline consumed in the United States, provided that all this material could be collected and processed.

THE use of alcohol in motor fuel can be visualized either on the basis of national use of a standardized blend containing a definite high percentage (10–15 percent of alcohol) as one extreme, or by the localized production and in-constant use of blends of varying and low alcohol concentration as the other. In the latter case the alcohol will likely be produced from such varying local supplies of crops as may be securable, in which probably some of the culls, by-products, or temporary surpluses would be absorbed.

The amount and the cost of such alcohol would vary widely. Present alcohol costs can possibly be reduced by process economies—since only an impure product is needed—or by raw material price reductions. Surplus and waste materials, now often unsold or unutilized, might be diverted to industrial use at low figures if the main costs of crop raising are assessed against the main portion of the crop sold for food or feed. Increased yields per acre might permit larger acre returns, even with lower crop unit prices.

Experimentation has indicated that the average production of various crops might be considerably increased by improved farming methods. New developments with hybrid corn, sweetpotatoes, and other crops have demonstrated the possibility of increasing acre production of these raw materials, at least in the more suitable areas. Raising more crops on the same acreage would mean proportionately increased costs for labor, seed, and fertilization, the last item being perhaps the principal one.

THERE has been some discussion concerning "industrial" crops, or crops grown in unlimited quantities directly for industrial use. Such crops would perhaps net a lower unit price return, but would permit farm overhead to be distributed over more production units. Whether this will be practical remains to be demonstrated. Crop failures, however, would represent a heavier investment loss than under the present system.

An alcohol motor fuel program must have sources of raw material which will be continuously adequate during a long period of years. In poor crop years, plants and personnel and capital charges will have to be carried. Dependence on the availability and use of occasional crop surpluses, or of crop culls and wastes, while locally possible for small areas, could only yield fluctuating and indeterminate amounts of alcohol at costs higher than normal.

PRESENT plant capacity for processing the crop material into alcohol is lacking. Perhaps 250 million gallons of additional alcohol might be produced by the existing industrial alcohol and alcoholic beverage plants, if run at full capacity, but this is only about one-tenth the requirement for a national 10 percent blend. Suitable denaturants must be developed, and the problem of control of illegal diversion of alcohol will have to be met. Actually, for a national program about 300 alcohol plants will have to be built, at a cost of 250 million dollars, and governmental inspection costs will be greatly increased.

Alcohol yields, processing costs, and feed by-product credits would differ for each material used. Some equalization would have to be effected for plants using poor materials through reason of geographic location to permit of competition with better situated plants. The effect of production of great quantities of by-product feed on animal and feed markets would have to be considered.

IT may be considered that a 10 percent blend would function in an automobile engine about as efficiently as a straight gasoline. There are advantages and disadvantages, and the general statement becomes more accurate with modern motors using high compression ratios. Alcohol increases the "octane number" of the fuel, but yields decreased mileage. With concentrations greater than 10 percent

not only would the mileage decrease proportionately because of the lower heat values involved, but the obvious impossibility of producing sufficient alcohol for such blends prevents consideration of such concentration.

On the other hand, blends of low percentage, e. g., 2 percent, would be so diluted as to lose the inherent value of the alcohol in increasing the octane number, while at the same time practically no conservation of petroleum would be effected. A 10 percent blend, therefore, represents more largely a compromise than a scientific optimum. With engines designed to operate on alcohol blends, a 10 percent blend should be generally satisfactory.

Use of blends of varying concentration or composition is likely to introduce trouble and dissatisfaction to the motoring public. Introduction and use of fuel blends will undoubtedly have to be so supervised as to permit equal performance and cost competition. At present essential differences of cost under present systems would have to be met in some manner. Standardization of fuels would probably have to be effected.

IN connection with any proposed national alcohol fuel blend program it must be remembered that suitable fuel materials may be secured from other than agricultural sources. The cost of any replacement fuels today is higher than present gasoline costs. Probably the cheapest future source of replacement fuel will be from waste gases, particularly cracking gases of the petroleum industry. There is, however, a limitation to the present supply of such gas and in the future such limitations would depend on the number of cracking plants and the duration of the petroleum reserves. The chief advantage of gases as fuel sources lies in the fact that either alcohols or hydrocarbons similar to gasoline can be obtained from the same materials by process variations. Polymerization, hydrogenation, and other process adaptations are possible. It has been claimed that alcohol from this source can be produced more cheaply than by fermentation.

The fermentation process, using the annually replaceable carbohydrates produced by the interaction of water, sunlight, air, and soil will probably be the next logical source from the standpoint of quantities available and of production cost. The supply is relatively endless, and the process is simple and requires a comparatively small plant investment.

AS a further practical source, the chemical conversion of wood may be considered, although such chemical conversion may be cheaper or more practical as a charcoal/steam blau gas process whereby carbon monoxide and hydrogen are obtained for further synthesis, rather than by processes involving the formation of sugar from the wood for subsequent fermentation into alcohol. At present the wood supply in the United States would be entirely inadequate to meet replacement fuel needs. Under a program of reforestation, perhaps of land inferior for crop raising, some future possibilities may be visualized.

The next possible source would be oil shale, of which tremendous deposits exist. In this case the cost of extraction of shale oil will probably be too high in comparison with present gasoline costs, and a relatively large amount of coal will be required for distillation. Shale oil is chemically very similar to petroleum.

The hydrogenation of coal has also been discussed as a possible source because of the relatively large world-wide coal deposits, but at present the capital costs of hydrogenation plants are from ten to fifty times that of an equivalent alcohol plant, and when the cost of the raw materials is added to the capital cost thus incurred, a figure of perhaps 25 cents a gallon will be indicated for the fuel. How far such cost may be reduced in the future cannot now be stated. Coal hydrogenation is being done in England, Italy, Germany, and Japan, but under government subsidy.

So far as a national conservation of fuel is concerned, the use of a large portion of our present liquid fuel supply for heat purposes might be considered uneconomic if it forced us later to create other liquid fuels out of coal by an expensive process.

It is evident, therefore, that experimentation on the production of agricultural fuels should be undertaken immediately, so as to advance the day at which present wastes may be utilized with economic success. By prompt attack on the problem the crop production and alcohol production facilities may be expanded to the point where an agricultural replacement fuel industry may be ready to partly replace diminishing fuel resources. The economic situation in a decade may be greatly different from that of today.

P. Burke Jacobs,
Bureau of Chemistry and Soils.

Demand Factors Higher

Continued and substantial improvement in most of the measures of domestic demand, shown in the accompanying tabulation, assure further expansion in the domestic demand for farm products. The October gains in factory employment and pay rolls, in industrial production, and in construction, and the absence of any rise in urban living costs, justify an expectation of a strong upward trend in urban purchasing power.

Recent gains in construction have been little short of sensational. The index of contracts awarded, as computed by the Federal Reserve Board in all the factory-made dairy products for October, was 87 percent higher than at the low point in March of this year. It was the highest since July 1930.

Although some temporary relapse in economic activity, following such a marked upward surge as has occurred since June of this year, should not be unexpected, the 1939 outlook is distinctly favorable to further expansion in productive activity, national income and purchasing power, and in the domestic demand for farm products.

Measures of Domestic Demand

(1924–29=100)

	October				Percent change		
	1929	1933	1937	1938	1937–38	1933–38	1929–38
National income	108.3	64.4	95.0	88.7	−7	+38	−18
Nonagricultural income:							
Total	109.1	66.4	96.4	90.3	−6	+36	−17
Per capita	103.3	61.3	85.8	79.8	−7	+30	−23
Factory pay rolls:							
Total	108.0	58.1	99.3	79.6	−20	+37	−26
Per employed wage earner	101.8	70.4	94.9	91.5	−4	+30	−10
Industrial production:							
Total	110.5	71.1	95.5	89.9	−6	+26	−19
Factories processing farm products	108.3	91.3	90.8	100.6	+11	+10	−7
Other factory production	111.3	62.4	97.5	84.3	−14	+35	−24
Construction activity:							
Contracts awarded, total	88.4	30.6	43.0	71.1	+65	+132	−20
Contracts awarded, residential	60.0	10.8	32.2	51.0	+53	+372	−15
Employment in production of building materials	93.0	42.6	67.5	58.3	−14	+37	−37
Cost of living:							
Food	103.6	68.9	81.8	75.2	−8	+9	−27
"All other items"	98.1	82.7	86.2	85.9	(1)	+4	−12
Purchasing power of nonagricultural income per capita:							
For food	99.7	89.0	104.9	106.1	+1	+19	+6
For "All other items"	105.3	74.1	99.5	92.9	−7	+25	−12

[1] Less than ½ of 1 percent.

Note.—All indexes adjusted for seasonal variation except "Cost of Living."

General Trend of Prices and Wages

[1910–14=100]

Year and month	Wholesale prices of all commodities [1]	Industrial wages [2]	Prices paid by farmers for commodities used in [3]—			Farm wages	Taxes [4]
			Living	Production	Living and production		
1920	225	222	222	174	201	239	209
1921	142	203	161	141	152	150	223
1922	141	197	156	139	149	146	224
1923	147	214	160	141	152	166	228
1924	143	218	159	143	152	166	228
1925	151	223	164	147	157	168	232
1926	146	229	162	146	155	171	232
1927	139	231	159	145	153	170	238
1928	141	232	160	148	155	169	239
1929	139	236	158	147	153	170	241
1930	126	227	148	140	145	152	238
1931	107	208	126	122	124	116	217
1932	95	179	108	107	107	86	188
1933	96	172	109	108	109	80	161
1934	109	183	122	125	123	90	153
1935	117	192	124	126	125	98	155
1936	118	200	122	126	124	107	156
1937	126	215	128	135	130	120	161
October	125	214			128	126	
November	122	206			127		
December	119	208	126	127	126		
1938—January	118	204			126	111	
February	116	208			126		
March	116	208	123	128	125		
April	115	204			125	115	
May	114	201			125		
June	114	202	122	126	124		
July	115	205			123	120	
August	114	209			122		
September	114	214	121	122	121		
October	113	212			121	118	

Year and month	Index of prices received by farmers [August 1909–July 1914=100]								Ratio of prices received to prices paid
	Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chickens and eggs	All groups	
1920	232	248	191		174	198	223	211	105
1921	112	101	157		109	156	162	125	82
1922	106	156	174		114	143	141	132	88
1923	113	216	137		107	159	146	142	93
1924	129	212	125	150	110	149	149	143	94
1925	157	177	172	153	140	153	163	156	99
1926	131	122	138	143	147	152	159	145	94
1927	128	128	144	121	140	155	144	139	91
1928	130	152	176	159	151	158	153	149	96
1929	120	144	141	149	156	157	162	146	95
1930	100	102	162	140	133	137	129	126	87
1931	63	63	98	117	92	108	100	87	70
1932	44	47	82	102	63	83	82	65	61
1933	62	64	74	105	60	82	75	70	64
1934	93	99	100	103	68	95	89	90	73
1935	103	101	91	125	118	108	117	108	86
1936	108	100	100	111	121	119	115	114	92
1937	126	95	122	123	132	124	111	121	93
November	85	65	88	124	120	132	135	107	84
December	86	64	76	112	111	136	127	104	82
1938—January	91	66	70	101	110	128	113	102	81
February	89	68	68	121	110	121	94	97	77
March	85	70	69	107	117	117	93	96	77
April	82	71	68	117	114	110	93	94	75
May	79	71	77	99	111	103	98	92	74
June	77	68	73	99	116	98	99	92	74
July	72	71	79	115	123	101	103	95	77
August	62	69	78	91	115	102	105	92	75
September	63	69	75	98	117	104	118	95	79
October	60	72	70	108	111	107	124	95	[5] 79
November	60	73	71	98	111	109	131	94	[5] 78

[1] Bureau of Labor Statistics Index with 1926=100, divided by its 1910–14 average of 68.5.
[2] Average weekly earnings, New York State factories. June 1914=100. Revised.
[3] These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.
[4] Index of farm real estate taxes, per acre, 1913=100.
[5] Preliminary.

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